

BOOK REVIEW

INTERCELLULAR COMMUNICATION IN PLANTS: STUDIES ON PLASMODESMATA, edited by B. E. S. Gunning and A. W. Robards, with pp. xvi+387 and 90 figures. Berlin-Heidelberg-New York: Springer-Verlag, 1976. US \$29,60.

Two well known plant cytologists (Gunning—particularly for his work on transfer cells and Robards—for his book on Electron Microscopy and Plant Ultrastructure, McGraw-Hill) have combined forces as editors of a work that, judging from the title, might precede others on intercellular communication. The book is on the *plasmodesma* and represents the contributions of 13 authors. Except for Robards and D. T. Clarkson, both from the UK, the remaining 11 authors are Australian biologists, no less than eight of them from the Australian National University, Canberra City.

One might be excused for initially thinking that with 13 participating authors there should of necessity be an unnecessary duplication of coverage. However, this is not the case and the editors have seen to it that the contributions from the respective physiologists, virologists, biophysicists and cytologists were properly dovetailed to avoid some of the obvious pitfalls which normally attend the amalgamation of conference proceedings.

The treatise is voluminous, but on balance it is a well-reviewed and well-documented account of the current status of knowledge of a cell structure that, probably more than any other, is responsible for the establishment and maintenance of histogenic and, by implication, organogenic continuity. The book discusses the origin, development and occurrence of *plasmodesmata* in lower and higher plants and deals with their function in intercellular water, ion and nutrient transport. In addition, it considers special problems of electrophysiological communication and virus movement.

Robards' term *desmotubule*, used to describe the protoplasmic thread that traverses the plasmodesmatal canal, seems to have gained general acceptance. I did not find reference to Schulz and Jensen's view that this thread might be a microtubule, but it is possible that I overlooked it.

The editors have collected all the references under a special section on bibliography rather than follow the convention of at least some proceedings of including them at the end of each respective contribution. This makes for easier access to all the literature consulted by the authors.

This book on *plasmodesmata* may be regarded by some botanists as rather specialized, but I am sure it will be welcomed and used by all serious cytologists and by physiologists interested in phenomena of transport and communication. A thorough treatment of this topic has been long overdue and one would hope that it might be followed by others, to throw light on other often confusing or perplexing cytological problems, for example, such as those concerning microbody ontogeny and development.

The most important message of this book, as far as I am concerned, is that it has underscored the strength of Australian botany and more particularly that of one department in one Australian university. Also, as far as I am concerned, it has helped once again to underline our wasted potential in South Africa in this regard.

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